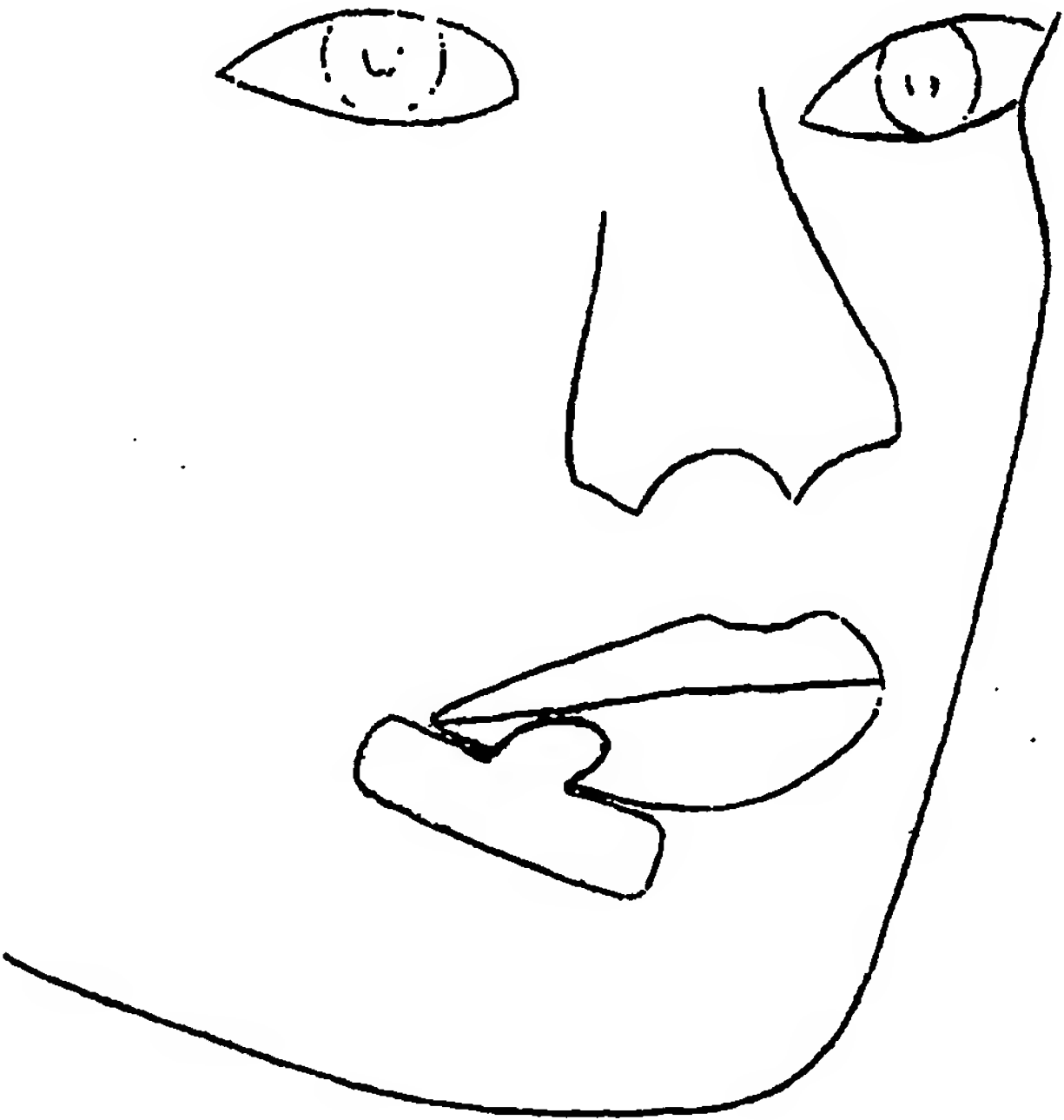




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : A61K	A2	(11) International Publication Number: WO 00/41670 (43) International Publication Date: 20 July 2000 (20.07.00)
(21) International Application Number: PCT/TR00/00001 (22) International Filing Date: 11 January 2000 (11.01.00) (30) Priority Data: 99/00033 11 January 1999 (11.01.99) TR 99/03291 28 December 1999 (28.12.99) TR (71)(72) Applicant and Inventor: DEGIRMENCI, Ahmet [TR/TR]; A. Aydin Cad. No: 11/B, Aktepe Mah, Gaziemir-Izmir (TR).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>
(54) Title: PHARMACEUTICAL FORMS AND METHODS FOR PENETRATION CONTINUITY (57) Abstract <p>Since topical medicaments having fluidity such as ointment, dressing are removed within a short time as a result of excessive motility and friction of their site of application such as lips, joints and similar parts, penetration of antiviral material into skin and therefore, topical treatment is most of the time hindered. The present invention is concerned with forms and methods to ensure penetration continuity that use soft stick, soft remedial stick, soft pencil, thermic soft stick, soft stick containing Acyclovir, supportive Herpes Labialis plaster that help treatment.</p> 		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

DESCRIPTION

PHARMACEUTICAL FORMS AND METHODS
FOR PENETRATION CONTINUITY

5

Field of invention:

Neck, wrists, elbows, knees as well as tongue and lips are of mobile parts of human body. In the course of performance of compulsory functions such as talking, eating, drinking, walking and of similar motions, such parts come into touch with each other or move back and forth along surface of clothing. Owing to this fact, ointments, dressings, lotions and similar liquid preparations applied to such parts for treatment purposes and also, topical medicaments, having, though partial, a certain degree of fluidity and solubility, are, in general, within short a time, removed from their sites of application with the result that their capacity to penetrate into the skin are to a large extent hindered.

Owing to tongue and lips being extremely active in the course of daily performances of eating, drinking and talking functions and to these coming frequently in contact with each other, the dressing form in application against Herpes Labialist of Acyclovir quite few a number of effective results since it is as mentioned above removed quick from their sites of application, that is to say without being able to make certain an effective penetration.

The object of this invention is concerned with provision of carriers, having appropriate mechanisms and forms to ascertain continuous penetration in the course of therapeutic treatments, to be used in replacement of above-cited preparations.

Subject carriers may be in the form of soft remedial stick, stick, soft stick, thermic soft stick, soft pencil to be applied direct to active parts of human body and in the form of a supportive plaster, on which is spread a medicated substance and a supportive plaster incorporated with effective element, enabling preservation at site of application of such dressings.

The carrier mass for such mechanisms and forms may be a solid excipient selected from the group consisting of natural, synthetic, semi-synthetic excipients having hydrophilic and/or hydrophobic structures, either alone or in mixture with any of polyhydroxy alcohols or any of their polymers (such as, for instance, propylene glycol, polyethylene glycol, polypropylene glycol, transcitol and any of the other conventional solvents).

Background of the invention

Viruses live in cells of animals, plants and bacteria and proliferate therein. Their having a simple structure and scarcity of their enzyme system create difficulty in finding a correct location for application of medicaments to obtain a selective effect. Since viruses spend life within cells, it requires that medicaments get into the same cells.

Symptoms of diseases exhibit themselves when their reproduction attains maximum. Therefore interfering in the cycle does not make any serious shift in the run of the disease. But before symptoms become apparent, if the cycle is inhibited within the period of incubation, development of disease is hindered or intensity may be reduced. Therefore, in virus-related diseases, prophylaxis is more important than treatment. However, the virus of Herpes Simplex (HSV) is beyond such a rule.

Herpetic infections in humans are frequently caused by HSV and Varicell Zoster (VZV). There are six known Herpes viruses in humans. Also, there exist a multitude of viruses in animals. Herpes Simplex viruses are divided into two cerotypes such as HSV-1 (type 1) and HSV-2 (type-2). Clinical manifestations of these may vary from benign, self-limiting oral, facial, genital infections to infections of significance threatening life such as ancephalite and generalized neonatel.

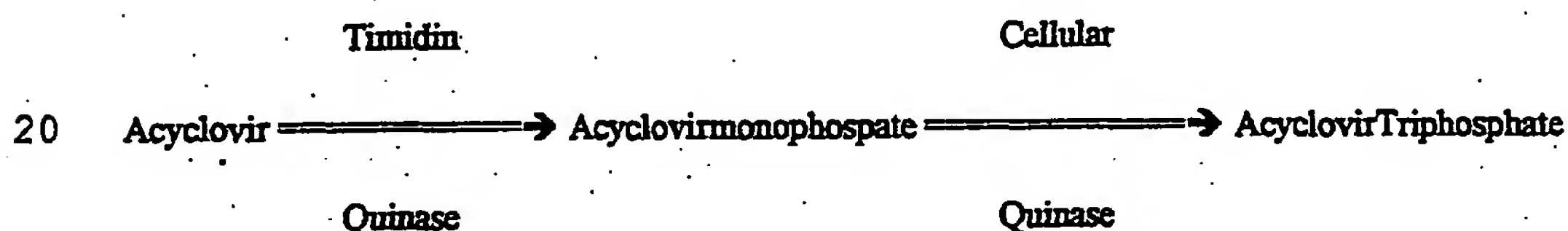
Acyclovir is a major antiviral and is a pre-medicament. It may be applied either systemic (oral, I.V) and/or topical.

HSV-1 and HSV-2 display inhibitor activity in vitro against VZV, Epstein-Bar and Cytomegalovirus.

Herpes infection, if limited with skin and/or mucosis membrane, topical treatment is preferred. Heavy medicament concentrations may be ascertained locally at sites where viruses are in reflux without making human body fraught with excess medicaments. Acyclovir, 9- [(2-hydroxyethoxy) methyl] guanine is a synthetic acyclic purine nucleoside analogue. It is the most selective antiviral effective against Herpes Simplex.

Thymidine kinase, being an enzyme coded by viral DNA, acts as agent in transforming Acyclovir to Acyclovir monophosphate inside infected carrier cell. However, since substrate specificities of viral thymidine kinase differ from that of mammals, in healthy cells Acyclovir cannot be activated. Being viral thymidine kinase not present in healthy cells, Acyclovir becomes selective against Herpes Simplex.

Acyclovir monophosphate in infected cells are turned into Acyclovir triphosphate (acyclo GTP) by kinases of cells. Acyclovir triphosphate is the basic metabolite exhibiting antiviral effect. It is in the same time substrate of DNA polymerase. Viral DNA polymerase introduces Acyclovir triphosphate into extending DNA chain. Under such a circumstance, viral DNA's extension and completion becomes impossible.



To materialise inhibition of viral polymerase, it requires that these be submitted to phosphorylation thrice by viral and cellular thymidine kinases. The halving lifetime of antivirals is short.

Oral, facial HSV infections are caused by HSV-I. Following an infection incurred in the early years of infancy, HSV and Varicella Zoster viruses become latent in neural ganglions. Viruses sheltering themselves in human body till its completion of their lifetime time by time becomes activated and gets into the skin through neural system and causes occurrence of an recurrent oral, facial infection (called herpes).

Of HSV and Varisella Zoster viruses, there exist stocks naturally resistant to Acyclovir. The basic reason for such a resistance is the virus stock being unable to produce thymidine kinases. After a certain time of using this or similar medicaments, there may be expected to form such a resistance.

5 By using Acyclovir, it is possible to smooth clinical run of the viral infection but it is impossible to reduce rate of recurrence.

In experiments conducted using dressing at the rate of 5 % on patients, having Herpes Labialis, with poor immuno-system a reduction is reported being seen at the time of viral shedding and also, though little, in pain. In contrast with
10 this, in studies over recurrent Herpes Genitalis and Herpes Labialis conducted on patients with deficient immuno-system, it is reported being noticed slight reduction both in the course of viral shedding and also in pain, but no reply was obtained as regards to recovery.

It has been identified that Acyclovir was much more effective than histologic
15 cultures against Herpes Simplex viruses.

No data is available indicating hindrance of recurrent infections when dressing of 5 % is applied at times nothing as symptoms exist or showing that such an application prevents spread of infection to outsiders. Recommended dose and frequency of applications should not be exceeded.

20 Although, in connection with using Acyclovir dressing of 5 %, no clinical observation to indicate a viral resistance is on hand, such a likelihood exists. Therefore, the dressing should not be utilized in prophylaxis of recurrent HSV infections.

In bio-essays carried out lifelong on mice and rats with doses up to 450
25 mg/kg/day, when control animal group are compared with mice and rates subjected to treatment, no difference on incidence of nodular growth, either malicious or otherwise, was statistically noticeable. Furthermore, it was reported that Acyclovir did not affect early incidence of such nodular growth in such mice and rates, that it caused no chromosome damage to occur when applied with parenteral doses of 100
30 mg/kgs which rates and mice exhibit tolerance, that doses of 450 mg/kg/day orally

given to mice, of 25 mg/kg/day applied subcutanea to rates did not affect either fertility or prolificacy.

No information as to disposal of topical Acyclovir from milk is available. Acyclovir stick should be utilized with care during breast-feeding. Efficiency and reliability in infants are not described definitely yet.

No interaction has yet been identified between Acyclovir dressing and other medicaments, either topical or systemic, utilized within the same time.

Viral replication at lips takes inception early. Maximum viral load is obtained within 24 hours to follow such an inception. After that, viral concentration displays a sudden drop. In general, virus cannot be isolated within 70 to 80 hours. Pain, itching and burning are typical symptoms and a typical episode recovers in about ten days.

Acyclovir is absorbed at the rate of 20 % if taken from gastrointestinal tract. It is attached at low rates such as 9 to 33 % to plasma proteins. Without being too much metabolized in human body, it is discreted by glomerular filtration and tubular secretion through the kidneys. Elimination half time is about 2 and a half hour.

Currently, ointments containing Acyclovir are used against eye infections and dressing containing at the rate of 5 % in polyethylene glycole against surface infections.

The shedding period of viruses in primary infections (approximately ten days in labial infection, three weeks in genital infections) is much longer when compared with reactivated infections (three to four day in both labial and genital infections). Following the period of viral shedding, lesion becomes recovered within a few days in primary infections but, as regards to reactivated infections, inflammation continues even if viral replication terminates and clinical symptoms extend towards to following week.

Not any form, inclusive of I.V., of Acyclovir has any serious side effect. In topical application, there may be present a feeling of inflammation or pricking. Sometimes shedding may cause irritation. It should be utilized with care in patients having renal deficiency. It may raise urea nitrogen and creatine level at blood.

Previous articles;

W.O. 8500108, a method and preparation for the treatment of Acne Vulgaris; such a method includes topical application of a preparation formed of a antibacterial agent dissolved in DMSO (Amicasion, Lincomycene and similar thereto).

- 5 W.O. 9426273 AI 941124, Acyclovid derivatives for topical usage; combinations for topical use, formed of Acyclovir monophosphate and diophospate displaying accelerated (enhanced) activity against resistant stocks of Herpes Virus.

Patent number 5585379 dated 17.12.1992 Country IL, Acyclovir antiviral gel combination; an antiviral topical pharmaceutical compound, a gelatinizing agent and
10 an aqueous gel carrier comprising water soluble carboxylic or dicarboxylic acid to treat skin or mucosa related viral diseases; contains antiviral nucleoside derivative dissolving few in water.

Supruance, S., L., (Topical treatment of muco-cutaneous Herpes Virus infections, International Antiviral News, 1994. June, 2, page 86-87), it is reported
15 that experiments aiming at finding an effective topical treatment against recurrent Herpes Labialis in mammals failed owing to insufficient awareness of early medicament treatment and medicament formulation below optimal.

Although formulation of Acyclovir with aqueous form polypropylene provided use of Acyclovir in treatment of Herpes Labialis, results reported appear to
20 be dubious. However, it is being reported that a topical antiviral compound applied at the time the patient becomes aware of recurrence of a new episode needs to be of enriched formulation in order to ascertain its penetration down to solid stratum cornea.

Shereier, H. And allies, Journal of Controlled Release 30 (1994), page 1-5, a
25 survey regarding dermal and transdermal medicament distribution of encapsulated materials in liposomes and niosomes.

W.O. 96/24354, although it is stated that compounds prepared by a group formed of Acyclovir, Valacyclovir, Pencyclovir and Famcyclovir, Forcarnet may be incorporated in other topical forms, tests were conducted using dressing forms
30 containing antiviral at the rate of 5 %.

W.O. 96/24355, describes compounds directed to topical use on a carrier pharmaceutically acceptable consisting of a topical antiviral material and of antiinflammatory glucokortikoidyne.

W.O. 94/05258 is concerned with skin penetration enhanced specificities of
5 Acyclovir.

There is a common opinion, as to "first problem requiring solution to ensure an effective topical treatment in recurrent Herpes infections is provision of fast penetration to stratum corneum layer". However, in the course of investigations conducted, nothing has been come upon providing any elucidation on how
10 continuity of such an effective penetration would be ensured and to what level such a dressing may be expected to be successful in treatment.

It becomes clearly manifest from studies heretofore achieved that conventional dressing formulation currently in use are ineffective. The fluidity of the dressing already in flux is enhanced with that dressing coming in touch with lips
15 head and the tongue coming instinctively in touch with dressing material and lips touching continuously each other in the course of talking cause dressing being removed within few times from viral replication area.

It is reported that Acyclovir has been tested as an oral formulation against recurrent HSV, but its effect remained limited under clinical circumstances when
20 used after symptoms made themselves manifest, even under such conditions, recovery term was reduced about one day, that, in summary, in treatment even if with the most marked antiviral medicaments of recurrent Herpes viral infections, clinical success was quite a few, that there existed a strong demand for provision of effective medicaments and methods in treating recurrent Herpes infections.

25

The basics of the invention;

Investigations performed on prior studies made to disclose scarcity of positive responses taken in topical applications of antivirals, no mention has been made of a search for formulation directed to ensuring a permanent penetration of
30 antiviral, which was impeded by tongue and lips being in continuous operation,

which removed quick dressings applied in case of Herpes Labialis, although frequent mention was being made that it required to ensure an effective penetration to obtain a therapeutically concentration.

5 In despite of obtaining very few positive results in topical treatment of recurrent Herpes infections, dressings containing Acyclovir are being utilized in countries in number exceeding more than one hundred since no alternative medicament is available for use in replacement of such an antiviral.

10 Regular moisture of lips constitutes the first stumbling block to application of preparations in the form of dressing. After dressing is applied, in turn, continual mobility of tongue and lips being in touch with each other in the course of performance of such functions such as sleeping, eating, drinking and talking cause removal of dressing a few moment to follow their application from their sites more than before therapeutically recovery takes place. Owing to omission, oblivion, to being in the state of sleeping, no fresh application of dressing is taken up. Even if
15 done, it is removed again.

With these randomly performed application of dressing, viral replication is repeatedly inhibited and causes more harm than benefit to occur.

In the course of in vitro experiments of medicament, patients and guinea pigs on which dressing were applied may be held motionless using clinical means
20 without moving lips as much as required for penetration to take place. But, under real time conditions, it cannot be expected that humans hold themselves standstill without talking, eating, drinking, sleeping and not moving their lips for one or two days so that dressing displays its effect.

Currently, the dressing form of 5 % Acyclovir content is being utilized in
25 countries in number in excess of one hundred and no alternative medicament is available for use in case of its substitution. Actually, excepting labial recurrences, to dressing form no objections have been raised yet. But it is fairly clear that less positive results obtained from recurrent Herpes Labialis infection cases stems from above-mentioned dressing form.

In order to assess the number of successful results obtained by using ointment with 5% Acyclovir, a public survey must be conducted instead of counting the successful results obtained in the clinics. Such a survey may comprise of questions such as "How often do you get Herpes Labialis? What do you do when you get it? What do you do when the medicament is removed from the application place during eating or talking? Do ulcer or lesions occur in spite of the treatment?"

In return for this, no negative result emerged from a multitude of applications carried out using soft stick form. Such a difference originates from soft stick form ensuring regular penetration as it is applied several times on herpes in the course of a day as such to perform friction thereon, with light beats, at times when it requires having heavy concentration at topical site.

The general formulation of the invention is as follows;

- | | |
|--|------------|
| a) antiviral (for instance Acyclovir) | 1 to 6 % |
| b) soft stick excipient according to invention and additives (stick and ointment excipients maybe single-handled or in mixture of appropriate rates or in emulsion form) | 94 to 99 % |

Patients becoming aware of recurrence, if they start treatment using soft stick with Acyclovir and proceed with so doing with intervals of one to two hours, face next morning with quick recovery without any trace being left by recurrence.

In cases where treatment takes place a little bit late than required, pain and symptoms disappear within short a time at replication site, no shedding takes place, a scab is formed and patients are reported to recover on the second day of recurrence with all complaints removed.

The outcome which emerges from such facts is that a successful intervention using antivirals against Herpes Labialis can only be effectuated by subject soft stick, soft remedial stick, soft pencil forms ensuring preservation of antiviral at appropriate site which ensures uninterrupted penetration.

Arrangements may be brought on the formulation of soft stick form's consistency in respect of softness as regards seasons and countries of differing climates where such sticks are intended for use.

In the event stick form's rigidity is in excess of what is required, though this enhances penetration continuity, may cause reduction in the amount of effective material which needs penetration. In order that antiviral dressing shows its effect, both of the above specifications are required, the soft stick form being in here of
5 advantage as it secures both continuity and efficiency.

The soft stick form is characterized by its being quite soft compared to stick form which requires being utilized in cases of edematous infections, by its being put into use only in its special packaging since its being inclined to bending, breaking and disintegration, by its having effective material which does not allow penetration
10 into skin and mucosa.

While soft stick form solves to a large extent the problem of penetration continuity, perhaps a reduction in penetration efficiency is likely to occur. But, to enhance efficiency, ideal excipient searches will continue hereinafter.

Soft stick form acts as carrier for application of ointments to mobile parts of
15 human body such as elbows, knees, ears and finger tips and lips, which are unable to preserve dressing against gravity. These are of consistency ranging between dressing and stick. Since in respect of consistency, it is softer than stick, it may be readily applied by holding it from its special packaging without hands coming in touch with it.

20 The packaging of the soft stick comprises a cylindrical recipient where carrier mass stands without suffering from breaking, a feed mechanism enabling moving upwards the carrier mass when turned rotatively around its axis and further enabling such carrier mass to come out when pushed any further, a feed cover having a soft seal on it, which leaves no gap for air to enter into in the course of use
25 when dressing is filled in from its orifice.

Formulation for general use of soft stick form may be as follows;

- | | |
|--|------------------------|
| a) efficient material | % in amount sufficient |
| b) soft stick excipient for soft stick mass, auxiliary and
protective additives (either alone or in emulsion form or
30 in mixtures) | % in amount sufficient |

Supportive Labial plaster :

Since above-cited dressing, ointment like preparations are removed before their being effective against Herpes Labialis from their sites of application owing to mobility in excess of tongue and lips in performance of daily functions such as eating, drinking, talking, herpetic treatment is likely to cease everytime medicament is removed.

The object of supportive Labial plaster is prevention of such a removal to ensure penetration continuity in the course of therapy time on replication area.

Subject invention consists of a plaster, an elastic portion and a sterile cloth of gauze. The plaster part is about 6 to 24 mm of size, the function of its inner part being adherent to skin outside lips defining limits. The part thereof which remains outside is of facial color or clear so as to draw attention less as much as possible. Plaster part may either be of single or double layer.

The elastic part may be of differing sizes depending upon blister of various dimensions and of mouth structures. On the average, its size will be around 6 x 12 mm and will be twisted about 90 degrees widthwise in the middle. One side of the twisted part is fastened from the middle of adhesive plaster sticking to the other longer side. Fastening may be carried out using double layer of plaster.

The function of the elastic is to prevent dressing from being removed together with sterile cloth of gauze locate to the inner part.

If the gauze on the elastic aprt of the supportive labial plaster does not contain a dressing, then it is called inhibitor supportive labial plaster and acts as continuous penetration provider by preventing the removal of the dressing during therapeutic timing.

When a dressing is incorporated to the gauze in pharmaceutically acceptable form, it provides a treatment with continuous penetration and it is called supportive labial plaster with a dressing such as Acyclovir.

The gauze in the inner side of the elastic part of the labial plaster contains a pharmaceutically prepared dressing and provides continuous penetration.

The outer surface thereof is of lips color to draw less attention. The outer surface of this part, again to draw few attention as much as possible few attention, is of lips color.

5 The two attached drawings indicate parts of the invention and their ways of application. Figure 1, indicates appearance following application on lips of subject plaster, while figure 2 shows parts of the subject plaster. Adhesive part is shown with number 6, part sticking elastic part to adhesive part with number 3, part that is laid on herpes of elastic part with number 5 and the portion bearing sterile cloth of gauze with number 4.

10 Measures given in the course of description for adhesive and elastic parts are intended to ease understanding rather than limiting scope of the invention. Such measurements are subject to variations depending upon mouth structures and herpes bristle sizes.

15 Application takes place, when inflammatory effect of lips herpes is felt, by placing dressing in certain amount on sterile cloth of gauze (for instance dressing containing antiviral ointment) of elastic part and bringing the whole for placing the same on and over herpes and ensuring adherence of the plaster to skin parts which remain outside lips (figure 1)

20 Supportive Labial is plaster may be placed together with dressing form inside packaging box in number and size as appropriate or supportive plaster may be marketed separate from antiviral.

Supportive labial plaster with a dressing incorporating a dressing in an appropriate pharmaceutical form on the gauze is presented for treatment as for instance supportive Herpes Labialis plaster.

25 Continuous penetration problem in reoccurrent Herpes Labialis is solved through these forms however the tendency to use medicament is realized when the fissures occur that is to say when antivirals cannot have any effect on natural process.

30 For treatments started after this stage, in order to lessen the recovery period of the fissures, fissures and other implications, an antiviral (such as Acyclovir) can

cooperate with a citatrizan-epitelizan substance (such as Dekspantenol) and this composition may be incorporated to the ointment applied with supportive Herpes Labialis plaster, soft stick form or gauze of the said plaster.

5 **Thermic soft stick, Pocket soft stick :**

The configuration and softness before usage is as conventional stick form. The main difference is that the main difference is that it is softened before application.

10 The properties of the stick usually deteriorate after several softening procedures. Therefore, excipient which do not loose their rigid properties after repeated softening should be used in production of the product.

15 The stick excipient which has the property as melting at body temperature 37 C degrees can easily melt when touched to the skin. Thermic soft stick is softened by touching it to skin e.g. by putting it in a pocket. Therefore it can be easily softened and applied for Herpes and oedemataous Herpes and other lesion at the body. Most easy way for softening would be replacing it into a pocket and it is named as pocket soft stick also.

20 The stick is softened before application and it is applied as a thin layer over the lesion. The outer surface of the layer hardens with contact with air and inhibits the medicament fading away. The inner layer on the skin remains softened and enables penetration to continue.

Variable body thermic soft sticks containing different medicaments for variable body parts and lips may be formulated. If the lesion is a Herpes Labialis infection and antivirus agent (a.g. Acyclovir) may be used.

25 The proper stick excipients which do not loose their properties while softening, methods for preparation and the proper form of package to soften with body temperature for application are determined with pharmaceutical means.

To enhance the penetration efficacy and to obtain minimum fading two thermic soft sticks may be used at the same time. The first stick may contain

excipients with high penetration ability and the second would contain proper excipients to form a film layer that would inhibit fading.

5

10

15

20

CLAIMS

1. Pharmaceutical forms and methods for the continuity of penetration comprising soft stick form made up through using pharmaceutical technology of a solid colloidal substance (such as cacao butter) selected from the group consisting of hydrophilic and/or hydrophobic structured colloidal substance of natural, synthetic, half-synthetic origin and of any one of polyhydroxy alcohol or polymer (such as propylene glycol, polyethylene glycol, polypropylene glycol, transcitol and/or other conventional solvents) used either alone or in mixture with each other or of emulsions there from.
2. Pharmaceutical forms and methods continuity of penetration according to claim 1, characterized in that they consist of a stick adherent with soft consistency together with an antiviral (such as acyclovir), and that they are a pharmaceutical with antiviral affect in the soft stick form that provides the penetration by other form and methods to Herpes Labialis; and providing of the antiviral penetration continuity by the following formulation:

a) an antiviral (such as Acyclovir)	1 to 6 %
b) a soft stick colloidal substance according to invention (either alone or in mixture or in emulsion of appropriate rates) additives and protective materials	94 to 98 %
3. Pharmaceutical forms and methods continuity of penetration according to claims 1 and 2, characterized in that the softening of the thermal soft stick by touching to the body before use, for example, by putting into a pocket, and the providing of an easy and good application part of the in this way, and remaining of the layer formed during the application to be in soft form due to this, and the top layer to freeze again approximately to the previous consistency by contacting air, and to form a layer which cannot be estranged, and is such a pharmaceutical application method and pharmaceutical form that function in this way.
4. Pharmaceutical forms and methods continuity of penetration according to claims 1 to 3, characterized in that the soft stick form has the general formulation as follows:

- a) effective material in sufficient amount %
- b) colloidal substance of soft stick consistency (either alone or in mixture or in emulsions of appropriate rates) together with additives and protective materials in sufficient amount %

5 5. Pharmaceutical forms and methods continuity of penetration according to claims to 4, characterized in that the possibility of preparing body thermal soft sticks that include various affective ingredients for various body symptoms, by using pharmaceutical methods, and the possibility of preparing labial thermal soft stick forms for the symptoms on the lips, and the possibility of the use of an antiviral
10 (such as acyclovir) or another affective ingredient for the lips, its being formed of the special adherents that do not lose their speciality during softening by touching/contacting to body again and again, and its being produced within a suitable package form for softening at body temperature.

15 6. Pharmaceutical forms and methods continuity of penetration according to any of the claims 1 to 5 characterized in that contains a cicatrizant-epitelizant material such as Dexpanthenol for the curation of skin lesions and ulcers in case of postponed treatment along with an anti-viral agent such as Acyclovir in dressings and the forms mentioned.

20 7. Pharmaceutical forms and methods continuity of penetration according to any of the claims 1 to 6, their property is the performance of application with two thermal soft sticks, at the same time to increase the penetration affectivity and to make the estrangement even more difficult and where two successive applications are made in this practice, adherents with high penetration affectivity are to be used for the first one, and adherents that prevent the estrangement/taking away by forming a film
25 layer on the first applied layer are to be used for the second one.

8. Pharmaceutical forms and methods continuity of penetration according to any of the claims 1 to 7, characterized in that the said soft stick form comprises a reservoir in pipe-form where in soft stick stands without being broken as the same has consistency close to soft almost approaching that of ointment, and further, a feeder
30 part located under reservoir enabling pushing upwards subject soft carrier mass

when such feeder mechanism is turned around its axis and a pass cover having at its orifice a soft seal, which leaves no garter for air to fill when carrier mass is filled in.

9. Pharmaceutical forms and methods continuity of penetration according to any of the claims 1 to 8, characterized in that such forms are utilised in the form of soft remedial stick, stick, soft stick, soft pencil, supportive Herpes Labialis plaster and
5 other forms for prophylactic and/or curative treatment of labial as well as other viral infections.

10. Pharmaceutical forms and methods continuity of penetration according to any of the claims from 1 to 9, characterized in the supportive Herpes Labialis plaster is
10 formed of a sticking part (shown as 6), a sterile cloth of gauze (numbered 4) and an elastic part twisted about 90 degrees from its middle along its width.

11. Pharmaceutical forms and methods continuity of penetration according to any of the claims from 1 to 10, characterized in that one side of the folds of the supportive Herpes Labialis plaster's elastic part is fixed, from the side of folding, to the middle
15 of sticking part long edge and to the section remaining between the other long edge (3) by using either double layer plaster or hot fastener or any of identical method of fastening.

12. Pharmaceutical methods and forms continuity of penetration according to any of the claims from 1 to 11, characterized in that sizes of elastic and sticking parts of the
20 supportive Herpes Labialis plaster are designed as such to vary according to different mouth structures and different herpes blister sites and in the color of face, lips or in clear.

13. Pharmaceutical forms and methods continuity of penetration according to any of the claims from 1 to 12 characterized in that an apparatus fixed on supportive
25 Herpes plaster exists to provide support which has a gauze placed on it.

14. Pharmaceutical forms and methods continuity of penetration according to any one of the claim 1 to 13 characteristic in that the form is provided in supportive labial plaster or inhibitor supportive labial plaster or supportive labial plaster having a dressing.

15. Pharmaceutical forms and methods continuity of penetration according to any one of the claims 1 to 14 characterized in that to the gauze of the supportive labial plaster is incorporated a dressing in the appropriate pharmaceutical forms and use of the supportive labial plaster as a medicament.

5 16. Pharmaceutical forms and methods continuity of penetration according to any one of the claims 1 to 15 characterized in that the inhibitor supportive labial plaster is used alone as a plaster to keep the medicaments to be applied to lips or in the manufacture of a medicament along with the said dressing

10 17. Pharmaceutical forms and methods continuity of penetration according to any one of the claims 1 to 16 characterized in that use of the supportive labial plaster as medicament having antiviral effects for supportive Herpes Labialis plaster incorporating an antiviral medicament in a pharmaceutically acceptable forms (such as having 5 % Acyclovir) into the gauze of the supportive labial plaster.

15

20

25

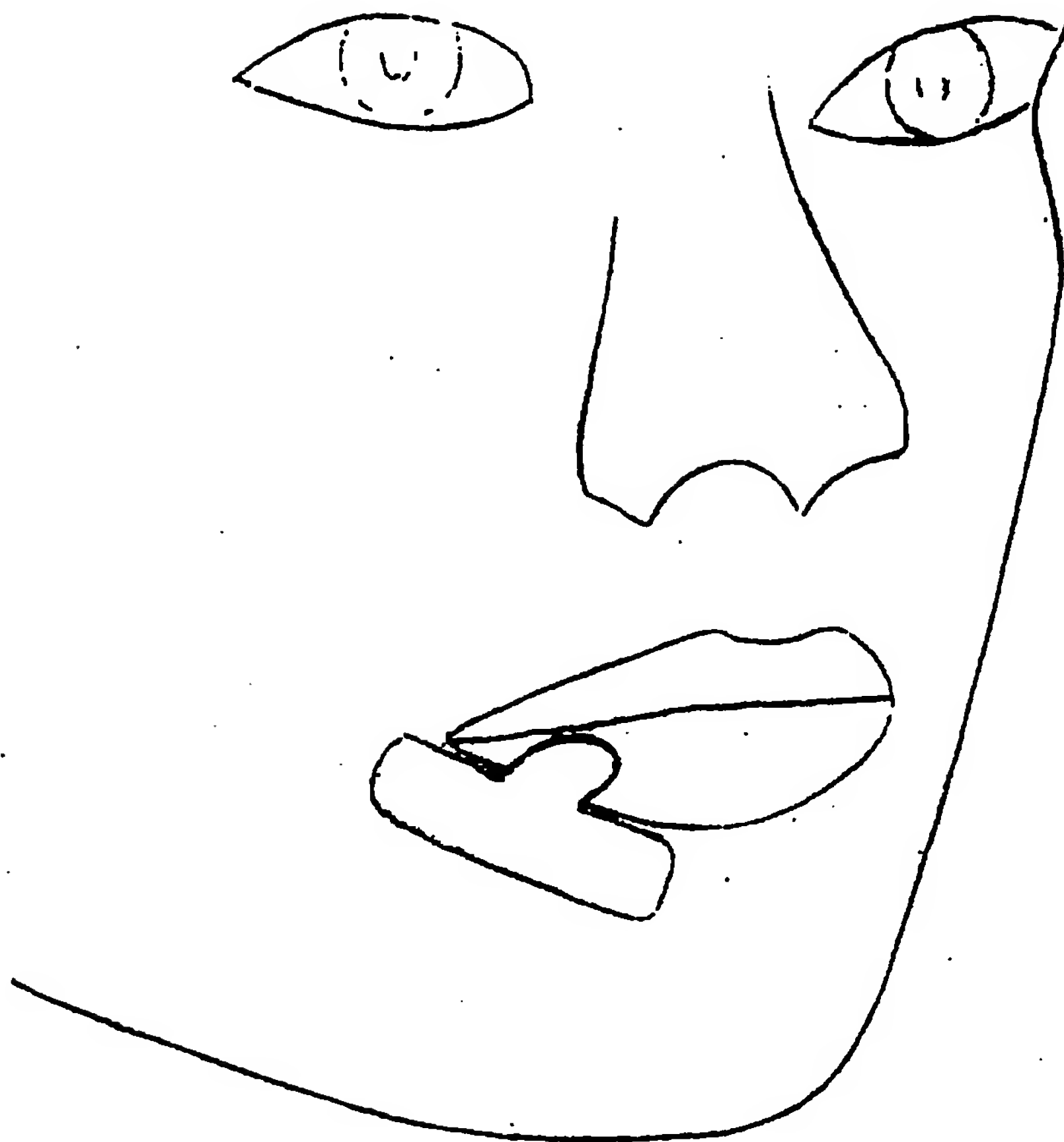


FIG. 1

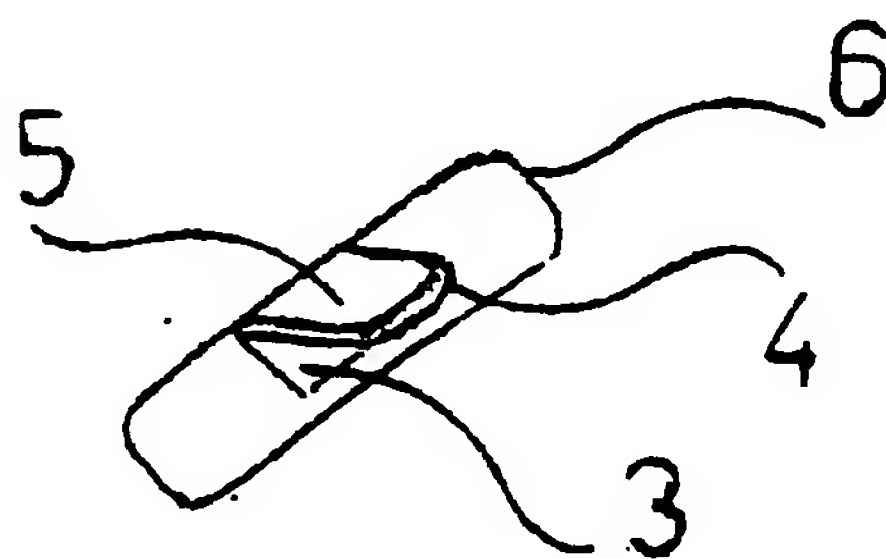


FIG. 2

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.